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Taiwan's Atlantic Bigeye Tuna Quota Restored

The International Commission for the Conservation of Atlantic Tuna (ICCAT), November 25, 2006, ruled that Taiwan's 2007 annual catch quota for Atlantic bigeye tuna will be restored to 14,900 metric tons, the amount Taiwan was allowed in 2005. In return, the island must continue to regulate its Atlantic fishery industry and report regularly to the Commission.

The decision to reinstate Taiwan's quota was made at the 15th Special Meeting of ICCAT from November 17 to 26 in Dubrovnik, Croatia, at which it was noted that Taiwan's efforts to implement ICCAT Recommendation 05-02 regarding control of Taiwan's Atlantic bigeye tuna fishery had been satisfactory. ICCAT is continuing to monitor Taiwan, in particular with regard to illegal, unregulated and unreported (IUU) fishing, and requires Taiwan to submit an interim report by July 1, 2007 and a final report 30 days before the 2007 annual meeting of

ICCAT, at the end of the year, when Taiwan's compliance will be further reviewed.

Other items on the 15th Special Meeting agenda included possible restructuring of the Permanent Working Group for the Improvement of ICCAT Statistics and Conservation Measures (PWG) and the Conservation and Management Measures Compliance Committee (COC), consideration of the adoption of a revised Compendium of ICCAT Conservation and Management Measures, various management measures for tuna and tuna-like species, investigation of the status of compliance by contracting parties and non-contracting parties concerning ICCAT conservation and management measures, and action plans for 2007.

ICCAT Recommendation 05-02, which was made in November 2005, temporarily slashed Taiwan's bigeye tuna catch quota and demanded stricter controls on tuna fishery by Taiwan, resulting in significant impact on the island's fishery industry. To meet Rec. 05-02, the

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Fisheries Agency (FA) of Taiwan has reduced the number of vessels in its fleet operating in the Atlantic. So far, it has scrapped a further 42 longline tuna vessels to bring the number of large-scale (greater than 24 meters) longline boats scrapped to 160. Furthermore, the FA has also drawn up various management measures, including strict management of boats wanting to continue operations in the Atlantic, placing observers on bigeye tuna boats, implementing regular port inspections, using vessel monitoring systems (VMS) on boats to monitor operations, requiring operators to send electronic catch reports daily, taking a census of small-scale (between 20 to 24 meters) tuna boats, investigating and preventing IUU fishing, and improving catch data reporting to make it

consistent with ICCAT regulations. As requested by ICCAT, the FA submitted quarterly reports to ICCAT on the progress of implementing Rec. 05-02.

Having reviewed Taiwan's reports and efforts to implement the Recommendation, ICCAT acknowledged its satisfaction that Taiwan had met the conditions set out to cooperate with ICCAT in conservation and management of tuna and tuna-like species by carrying out such measures as extensive reduction in the number of vessels, and stated that Taiwan has made significant progress in improving tuna fishery management to rectify the situation Rec. 05-02 was set out to address. However, delegates were somewhat skeptical about the ability of respective flag States to manage foreign-flagged vessels owned and operated by Taiwan residents and business interests and, therefore, questioned how Taiwan would sever IUU fishing links between Taiwan-registered boats and those foreign-flagged vessels once the quota was restored. Following extensive dialogue, negotiation, and compromise between Taiwan's delegates and the representatives of other nations, the Commission finally agreed to continue to grant Taiwan cooperating non-member status and to reinstate its Atlantic bigeye catch quota to 14,900 metric tons, the level agreed in Recommendation 04-01 made in 2004.

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In a formal statement regarding Taiwan, the Committee declared that Taiwan must limit the number of vessels under its registry authorized to conduct a directed fishery for bigeye tuna in the Convention area to no more than 64 in 2007, and 60 in 2008 and thereafter. In addition, these vessels shall be subject to the following monitoring and enforcement measures:

- ◆ Until the ICCAT observer program is implemented, no at-sea transshipment is permitted. Vessels must transship or land their catches at two designated ports: Cape Town or Las Palmas;
- ◆ Vessels shall submit daily catch reports to Taiwan's authorities by VMS or radio; Taiwan shall send a preliminary catch report to ICCAT on a semi-annual basis;
- ◆ Taiwan shall ensure 10% observer coverage by vessel in the entire fishery;
- ◆ For 2007, Taiwan shall conduct an appropriate port inspection and sampling program to verify compliance with quotas and other rules, and report the findings of this program to ICCAT;
- ◆ In order to control IUU fishing, Taiwan shall, in cooperation with other contracting parties and cooperating non-contracting parties, entities or fishing entities, continue to take effective steps to eliminate IUU fishing activities by Taiwan residents and business

entities and by vessels registered to Taiwan, including implementing meaningful regulatory and enforcement measures to stop foreign-flagged vessels owned by Taiwan business interests from exporting under the name of Taiwan, and working with the respective flag States to ensure that foreign-flagged vessels owned by Taiwan business interests comply with ICCAT conservation and management measures. Furthermore, Taiwan shall further investigate past and current IUU fishing activities involving Taiwan residents.

A Fisheries Agency spokesperson said that, in order to respond to international demands that Taiwan cut beneficial and financial relations with IUU operators, and work with respective flag States to manage foreign-flagged vessels owned by Taiwan business interests, the FA has already drawn up its Draft Regulations for the Management of Non-ROC-Registered Fishing Vessels Invested and Operated by ROC Citizens. The FA will actively push this draft to become law with the aim of making it a requirement for Taiwan residents to apply for prior permission to invest in and operate foreign-flagged fishing vessels and thus regulate their compliance with Taiwan fishery regulations developed in accordance with international fishery organizations for the protection and management of species. Such legislation will also allow heavy

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penalties for all infractions and punishment under criminal law for anyone found guilty of fish laundering and other illegal activities.



Taiwan and Central America Seek Greenhouse Gas Reduction Opportunities

The 2006 Taiwan-Central America Allies Environmental Ministers Conference ended October 19, 2006, with the signing of a declaration by Taiwan and seven Latin American countries agreeing to focus jointly on reducing greenhouse gas emissions.

During the two-day forum held in Taipei, environment ministers from Belize, the Dominican Republic, Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua held meetings with representatives from Taiwan's Environmental Protection Administration to discuss climate change, the development of reusable energies and technologies for recovering and reusing waste resources, clean production methods, and other issues.

Through the conference, Taiwan hopes to develop mutually-beneficial exchange and mechanisms for continued dialogue with Central American nations in the hope of creating opportunities for Taiwan to participate in greenhouse gas emission reduction through the

clean development mechanism (CDM) in Central America, in the future. In particular, Taiwan is looking to invest in development of reusable energy in Latin America, including hydroelectric power, biodiesel, and gasohol, as well as taking part in environment-related activities like afforestation and forest protection.

The conference culminated with the joint signing of a declaration by Taiwan's EPA Director General Chang Kuo-lung, Costa Rica's Minister of Environment and Energy Sr. Roberto Dobles Mora, the Dominican Republic's Secretary of State for the Environment & Natural Resources Sr. Maximiliano Puig Miller, Guatemala's Minister of the Environment and Natural Resources Mr. Juan Mario Dary Fuentes, Nicaragua's Minister of the Environment and Natural Resources Mr. Cristóbal Sequeira González, Belize Minister of State in the Ministry of Natural Resources Mr. Servulo Baeza, and senior officials from the ministries of environment and natural resources of El Salvador and Honduras.

The declaration paves the way for long-term dialogue between the nations in the future, as well as mutual cooperation and support in strengthening energy capacity building mechanisms, promoting greenhouse gas voluntary reduction plans—for instance by protecting forests, improving energy efficiency and promoting reasonable energy use, and

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increasing utilization of replacement fuels and renewable energies—and promoting environmental management and monitoring.

Over 100 environmental experts from Taiwan and abroad attended the forum. Two internationally-renowned experts in the field of long-term climate change research policy analysis, Dr. Robert K. Dixon, who is head of the Energy Technology Policy Division at the International Energy Agency (IEA) in Paris, and Dr. Mohan Munasinghe, vice chair of the United Nations Intergovernmental Panel on Climate Change (IPCC), were invited to talk about the latest directions in international climate change policy and technology development trends. Conference participants engaged in bilateral and multilateral discussions on sustainable development, climate change measures, environmental protection management, and other topics of exchange and cooperation.

Within the next three years, Taiwan and its Latin American allies will formally commence viable and mutually-beneficial cooperation in an energy environment partnership (EEP) with clear timescales and agendas along a framework of international environmental protection technology exchange and mechanisms, said EPA Director General Chang. The partnership will help private and government sectors in Taiwan build capacity for cross-national emissions reduction cooperation and create opportunities

for Taiwan to participate in international emissions trade.



2006 International Symposium on Ecological Engineering

In an effort to make ecological engineering a regular part of public construction projects, the Public Construction Commission of the Executive Yuan organized the five-day 2006 International Symposium on Ecological Engineering, starting November 6, 2006 in Taipei. The objective of the 2006 conference was to provide a forum for invited scholars and experts in ecological engineering and related fields from Europe, America and Asia to report on their experiences and the latest advances in ecological engineering, especially in the areas of stream restoration and road construction. The exchange between experts from abroad and Taiwan will be helpful in the integration of ecological principles with engineering practices in Taiwan.

A total of 10 ecological engineering experts from the United States, Japan, the Netherlands, Germany and Austria were invited to speak at the symposium, which was attended by around 1,000 people, including representatives of government, civil engineering unions, consulting firms, academia, and non-government environmental

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organizations. The main themes of the forum were: 'What is 'successful' ecological engineering?', 'Ecological engineering laws and regulations, safety and risk assessment, and ecological engineering technique specifications', and 'How to conduct dialogue with residents and environmental NGOs'.

In a keynote speech, Professor Volkhard Wetzel, director of the Federal Institute of Hydrology in Koblenz, Germany, said that, because much of Germany's natural environment is already highly developed, the German government pays particular attention to ecologically-oriented methods and concepts during related engineering projects to protect any rare and precious natural ecosystem that still remains. At present, the Federal Institute of Hydrology has already developed numerous methods and construction protection technologies to reduce environmental impact, and to rehabilitate species and structural diversity in rivers and coastal waters. In fact, German law clearly states that compensation and remedial action is required for any human act that causes a negative impact on the environment.

Another aspect of river conservation was addressed by Dr. Hideji Maita, associate professor at the Institute of Agricultural and Forest Engineering, University of Tsukuba, Japan. He emphasized that sediment delivery

systems are the main factor in determining the behavior of streams, so governments and conservationists should pay more attention to upstream-downstream interactions and sediment delivery systems if they want to put forward suitable rehabilitation measures for streams.

In a paper given at the symposium, Maita explored the conditions of sediment delivery caused by serious debris flow in the Higashi-gochi Stream, a tributary of Oi River in Japan, during the 1982 rainstorm, with the aim of deepening understanding of sediment delivery systems and their relation to vegetation. He discovered that, after each successive flood event of 1982, the sediment storage volume deposited on the valley floor decreased rapidly, with sediment volume maintaining lower levels and the rate of decrease being more pronounced in constrained reaches (narrow channel width and steeper flow) than in unconstrained reaches (wider channel and less steep sections). Maita attributed this difference in the rate of decrease to the lateral deposits dominating in the unconstrained reaches. With decreased flow depth in the unconstrained reaches, the stream flow left lateral deposits on the valley floor for a long time (with lateral erosion on the opposite bank); whereas sediment was rapidly removed by the high stream power in constrained reaches. This type of stream reach structure can be maintained for a long period of time and where

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sediment deposit storage is high it tends to be more stable. The terraces created play an important role by providing space for pioneer plant species that benefit the diversity of vegetation on the stream bank.

Stephen Jiang, who works for the Department of Transportation, at King County, Seattle in Washington, US, talked about ecological engineering from the standpoint of a structural engineer. The concept of ecological engineering took root early in the US and has become a routine and necessary part of all public works processes. In addition to minimizing the environmental impact in the design and construction processes, structural engineers can also put forward appropriate remedial mechanisms where construction causes environmental damage. These range from remedies for temporary negative impact, like grass- and tree-growing on verges after road digging, through to solutions to permanent negative impact, for instance, when a road is planned through a wetland, compensation must be made by creating new wetland that must be greater in area than the original wetland to a scale of 1.5: 1 to 12: 1, depending on an overall review of the conservation ranking of the wetland, its location, the impact of construction, and other factors.

Finally, Mr. Christian Weber, deputy director of the Austrian Ministry of Agriculture

and Forestry, Environment and Water Management, Department WLW-Torrent and Avalanche Control Service, linked the experiences of Austria in ecological engineering on mountain roads to the example of Taiwan's Central Cross-island Highway, which he has researched on several visits to Taiwan. He explained how ecological engineering applications and techniques could be used in mountain roads to minimize the environmental impact of construction through regulations, design, construction processes and follow-up maintenance.

Weber said that nature cannot defend herself; so nations have a moral duty to protect nature. Consequently, a large number of laws for the management of road construction in Austria were established to protect nature. For instance, the Austrian Forest Act states that forest roads must be planned and constructed by people with a background in forestry and that environmentalists must make up a certain proportion of personnel participating in their construction. Furthermore, the most important principle in construction is protecting the forest's original appearance. In addition, the Water Right Act states that surface water from roads must be cleaned by filter plants before entering rivers or other bodies of water. Mr. Weber emphasized that road surfaces and tunnels, in particular, contain toxic substances and heavy metals that

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are washed onto the land by rainwater; therefore, the Water Right Act is designed to control what happens to this polluted water and to reduce its impact on the environment.



National Land Monitoring Boosted by People Power

To encourage the general public to protect land in Taiwan and report unlawful land usage, the Taiwan Environmental Info Association (TEIA) has joined forces with the Council for Economic Planning and Development to establish the ‘Watch Our Land’ website (<http://land.e-info.org.tw>)—a web-based platform for members of the public to report and monitor illegal land use activity. From March 2006 to the time of writing, the website had received 51 reports, all of which have been passed on to the relevant authorities. Of these, at least 27 had been investigated and action taken, demonstrating the power of public monitoring.

Mr. Juei-Ping Chen, secretary general of the TEIA, the NGO responsible for setting up and managing the site, said that the power of NGOs in Taiwan to care for and supervise the island could not be underestimated. Although the website has only just come on line, he said, already it is serving as an effective mechanism

for Taiwan residents to ‘love Taiwan’ through concrete action.

The predecessor of the ‘Watch Our Land’ website was the National Land Use Monitoring Program jointly conducted by the Construction and Planning Agency (CPA) of the Ministry of the Interior and the Center for Space and Remote Sensing Research of National Central University (NCU CSRSR). The program, which began in 2001, aimed to use SPOT-5 satellite image technology to effectively detect land use changes on a national scale.

Head of the Geographic Information Systems Laboratory at NCU CSRSR, Associate Professor Chi-Farn Chen, said that by comparing satellite images taken at different time points, researchers were able to clearly see changes in the land cover. This information has a wide range of applications—for instance, in agricultural and forestry planning and in monitoring the extent of land use changes. It is also helpful in search or rescue missions. For example, satellite remote sensing can help locate ships that have gone missing. In environmental monitoring, satellite remote sensing images give clear pictures of the extent of marine contamination by oil tanker spills, of debris flow and flood monitoring, and of areas affected by disasters like the Southeast Asian Tsunami of 2004.

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At present, the CPA is continuing to cooperate with NCU CSRSR to monitor national land usage using satellite remote sensing images to find 'changed points'. Once the system detects an abnormal change in land usage—a 'changed point', it automatically sends the relevant information via a web-based GIS to inform the CPA, which then passes on the exact coordinates of the changed point and other relevant information to the local authorities so that they can conduct a field survey and take legal action where necessary. According to CPA and NCU monitoring records, the average annual rate of illegal land use occurrence detected by satellite remote sensing is now 12.39% (illegal changed points as a proportion of total reported points), compared to an earlier average of 33.33%.

The 'Watch Our Land' website was established with the aim of using voluntary reporting of illegal land development, through the uploading of digital photographs and descriptions of location coordinates and other relevant details, to assist NCU CSRSR in the verification of satellite images of changed points. By including details provided by the public via the website in information forwarded by the CPA to local government for investigation, the project hopes to obtain its goal of public participation and to harness 'people power' to increase the effectiveness of government efforts to protect Taiwan's limited land resources.

Since the project started, around one-third of cases received by the 'Watch Our Land' site have involved hillside land, a further one-third have involved rivers, and the remaining third have involved coasts, outlying islands and other types of land. As for the types of unlawful activity reported, one-third was unauthorized forest clearance, road building, and excavation and levelling, another third involved pollution, while illegal gravel mining, coastal and river silting, and logging made up the final third.



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